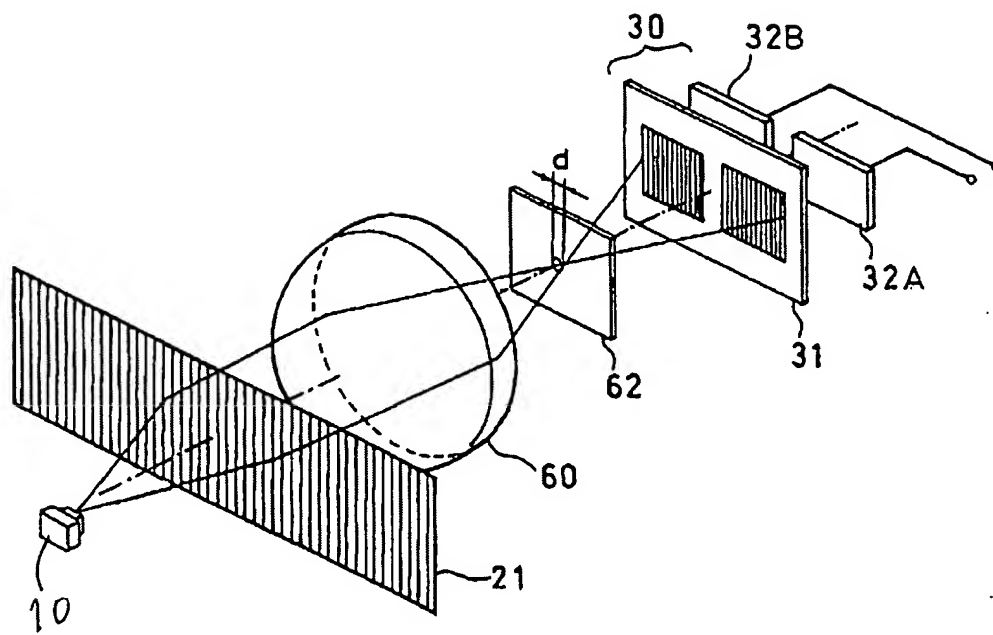


Title: OPTICAL CONFIGURATION FOR IMAGING-TYPE
OPTICAL ENCODERS

Inventors: Toshitaka Shimomura et al.

Docket No.: MEIP122170

Fig. 1

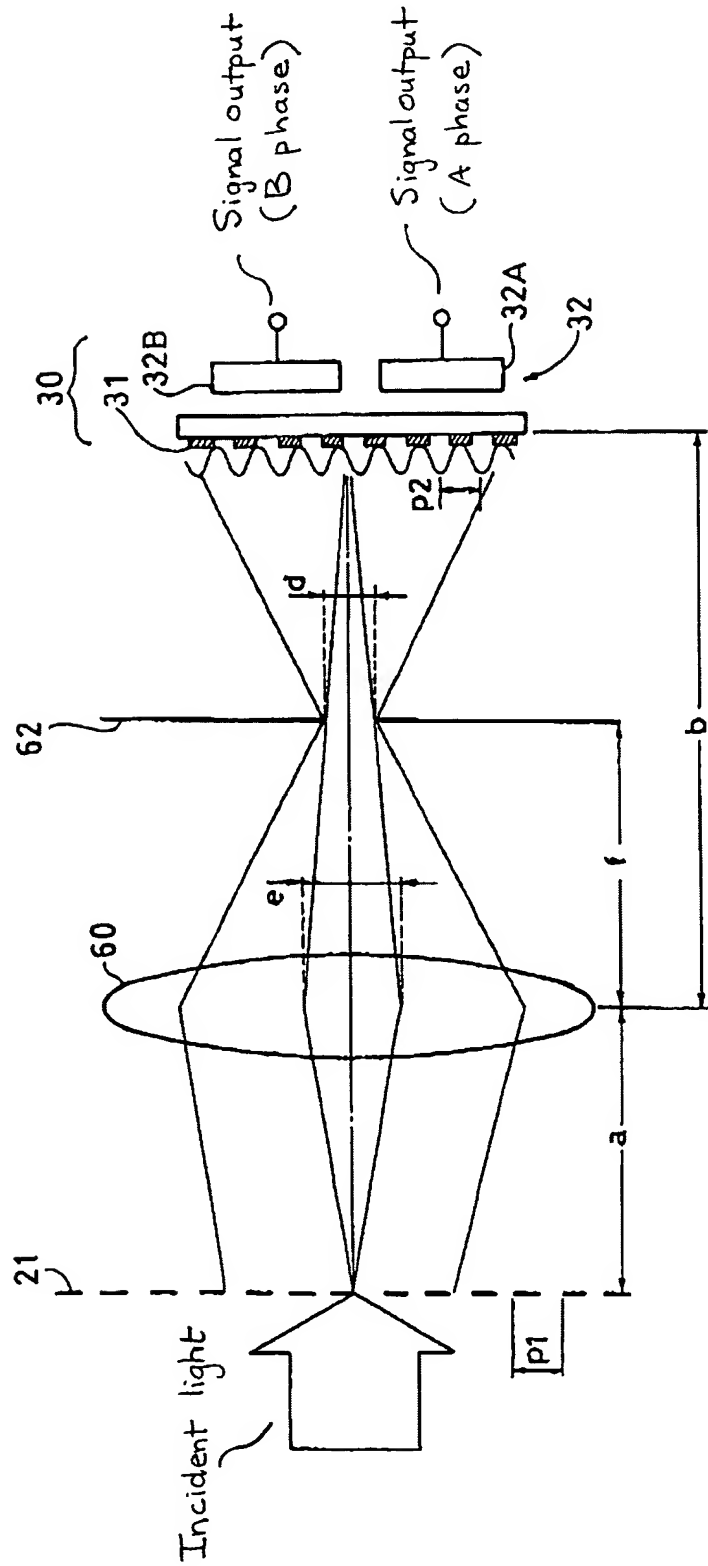


Title: OPTICAL CONFIGURATION FOR IMAGING-TYPE
OPTICAL ENCODERS

Inventors: Toshitaka Shimomura et al.

Docket No.: MEIP122170

Fig. 2

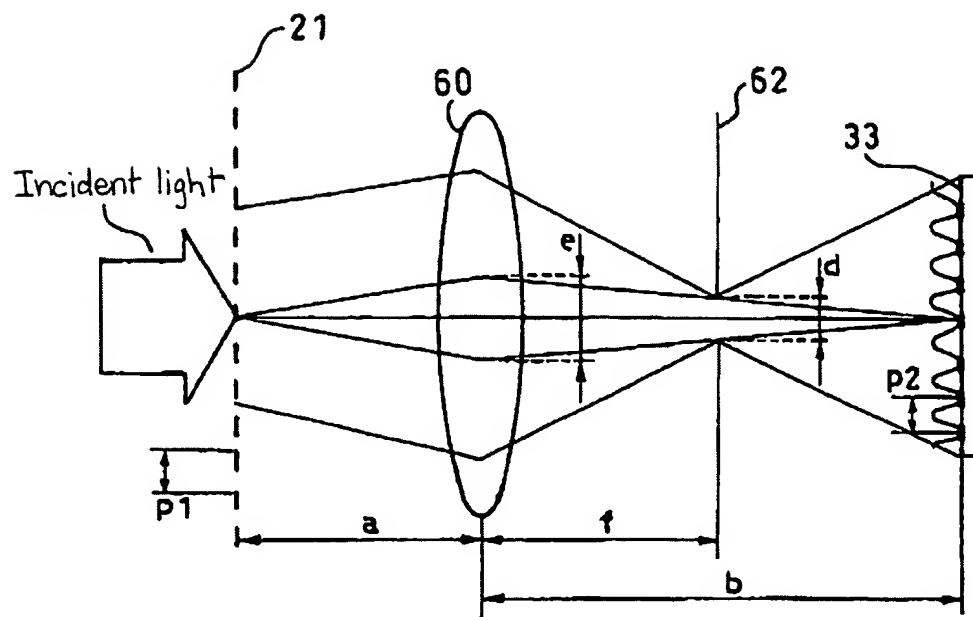


Title: OPTICAL CONFIGURATION FOR IMAGING-TYPE
OPTICAL ENCODERS

Inventors: Toshitaka Shimomura et al.

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Fig. 3



Title: OPTICAL CONFIGURATION FOR IMAGING-TYPE
OPTICAL ENCODERS

Inventors: Toshitaka Shimomura et al.

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Outer diameter

Effective focal length

Fig. 4

Dia. (mm)	EFL (mm)
1.0	0.8
1.5	1.0
2.0	1.5
2.5	2.0
3.0	2.5
3.5	3.0
4.0	4.0
4.5	5.0
5.0	6.0
5.5	8.0
6.0	10.0
6.5	12.0
7.0	15.0
7.5	20.0
8.0	25.0
8.5	30.0
9.0	35.0
9.5	40.0
10.0	45.0
10.5	50.0
11.0	55.0
11.5	60.0
12.0	65.0
12.5	70.0
13.0	75.0
13.5	80.0
14.0	85.0
14.5	90.0
15.0	95.0
15.5	100.0
16.0	105.0
16.5	110.0
17.0	115.0
17.5	120.0
18.0	125.0
18.5	130.0
19.0	135.0
19.5	140.0
20.0	145.0
20.5	150.0
21.0	155.0
21.5	160.0
22.0	165.0
22.5	170.0
23.0	175.0
23.5	180.0
24.0	185.0
24.5	190.0
25.0	195.0
25.5	200.0
26.0	205.0
26.5	210.0
27.0	215.0
27.5	220.0
28.0	225.0
28.5	230.0
29.0	235.0
29.5	240.0
30.0	245.0
30.5	250.0
31.0	255.0
31.5	260.0
32.0	265.0
32.5	270.0
33.0	275.0
33.5	280.0
34.0	285.0
34.5	290.0
35.0	295.0
35.5	300.0
36.0	305.0
36.5	310.0
37.0	315.0
37.5	320.0
38.0	325.0
38.5	330.0
39.0	335.0
39.5	340.0
40.0	345.0
40.5	350.0
41.0	355.0
41.5	360.0
42.0	365.0
42.5	370.0
43.0	375.0
43.5	380.0
44.0	385.0
44.5	390.0
45.0	395.0
45.5	400.0
46.0	405.0
46.5	410.0
47.0	415.0
47.5	420.0
48.0	425.0
48.5	430.0
49.0	435.0
49.5	440.0
50.0	445.0
50.5	450.0
51.0	455.0
51.5	460.0
52.0	465.0
52.5	470.0
53.0	475.0
53.5	480.0
54.0	485.0
54.5	490.0
55.0	495.0
55.5	500.0
56.0	505.0
56.5	510.0
57.0	515.0
57.5	520.0
58.0	525.0
58.5	530.0
59.0	535.0
59.5	540.0
60.0	545.0
60.5	550.0
61.0	555.0
61.5	560.0
62.0	565.0
62.5	570.0
63.0	575.0
63.5	580.0
64.0	585.0
64.5	590.0
65.0	595.0
65.5	600.0
66.0	605.0
66.5	610.0
67.0	615.0
67.5	620.0
68.0	625.0
68.5	630.0
69.0	635.0
69.5	640.0
70.0	645.0
70.5	650.0
71.0	655.0
71.5	660.0
72.0	665.0
72.5	670.0
73.0	675.0
73.5	680.0
74.0	685.0
74.5	690.0
75.0	695.0
75.5	700.0
76.0	705.0
76.5	710.0
77.0	715.0
77.5	720.0
78.0	725.0
78.5	730.0
79.0	735.0
79.5	740.0
80.0	745.0
80.5	750.0
81.0	755.0
81.5	760.0
82.0	765.0
82.5	770.0
83.0	775.0
83.5	780.0
84.0	785.0
84.5	790.0
85.0	795.0
85.5	800.0
86.0	805.0
86.5	810.0
87.0	815.0
87.5	820.0
88.0	825.0
88.5	830.0
89.0	835.0
89.5	840.0
90.0	845.0
90.5	850.0
91.0	855.0
91.5	860.0
92.0	865.0
92.5	870.0
93.0	875.0
93.5	880.0
94.0	885.0
94.5	890.0
95.0	895.0
95.5	900.0
96.0	905.0
96.5	910.0
97.0	915.0
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98.0	925.0
98.5	930.0
99.0	935.0
99.5	940.0
100.0	945.0

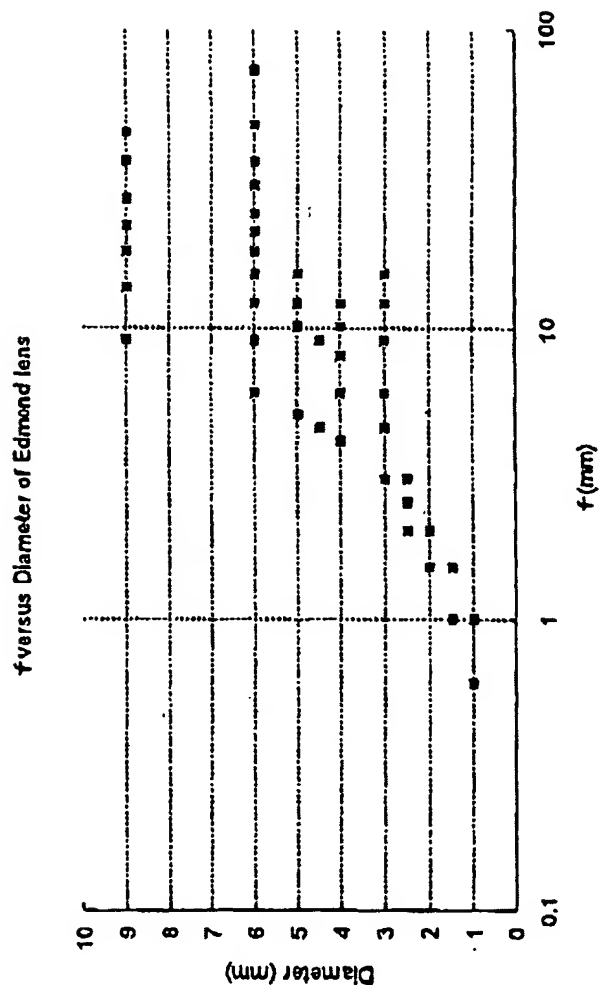
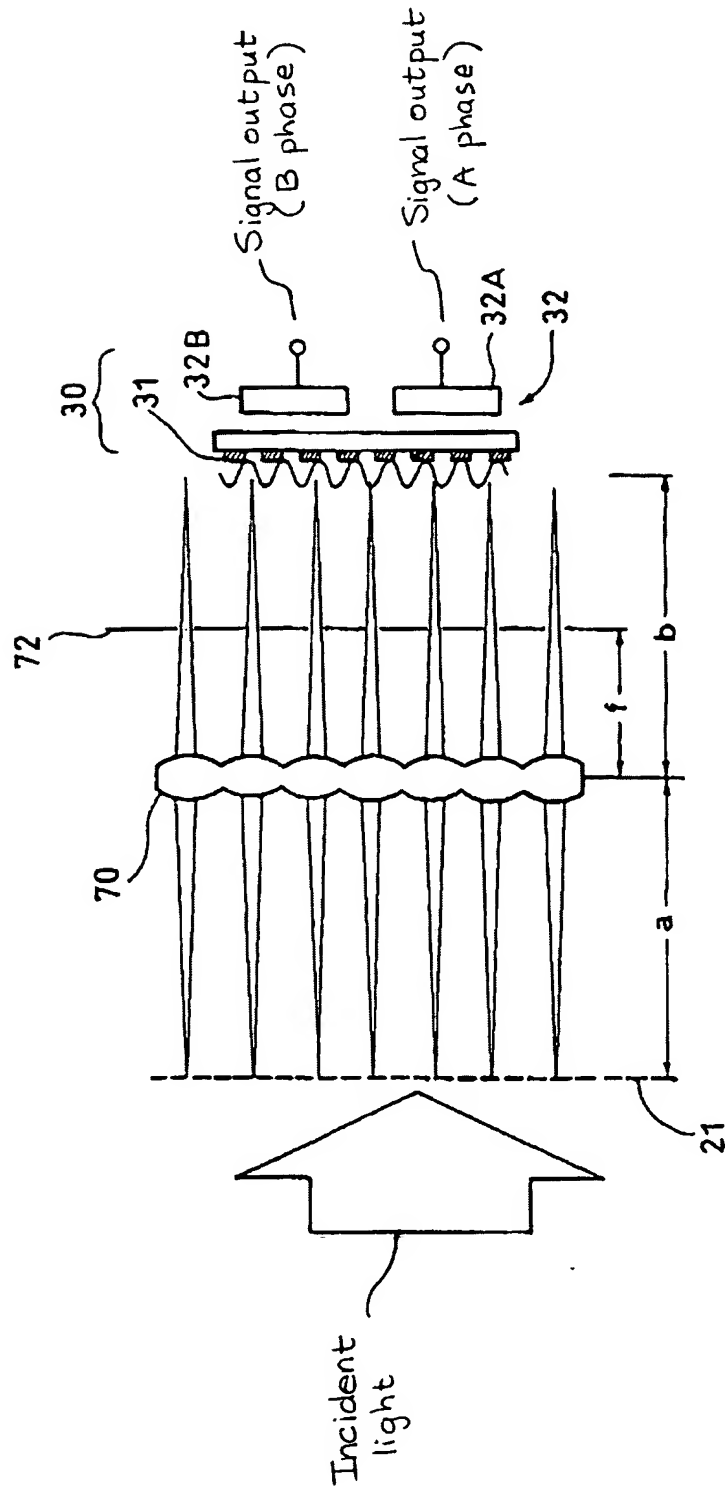


Fig. 5



Title: OPTICAL CONFIGURATION FOR IMAGING-TYPE
OPTICAL ENCODERS

Inventors: Toshitaka Shimomura et al.

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Fig. 6

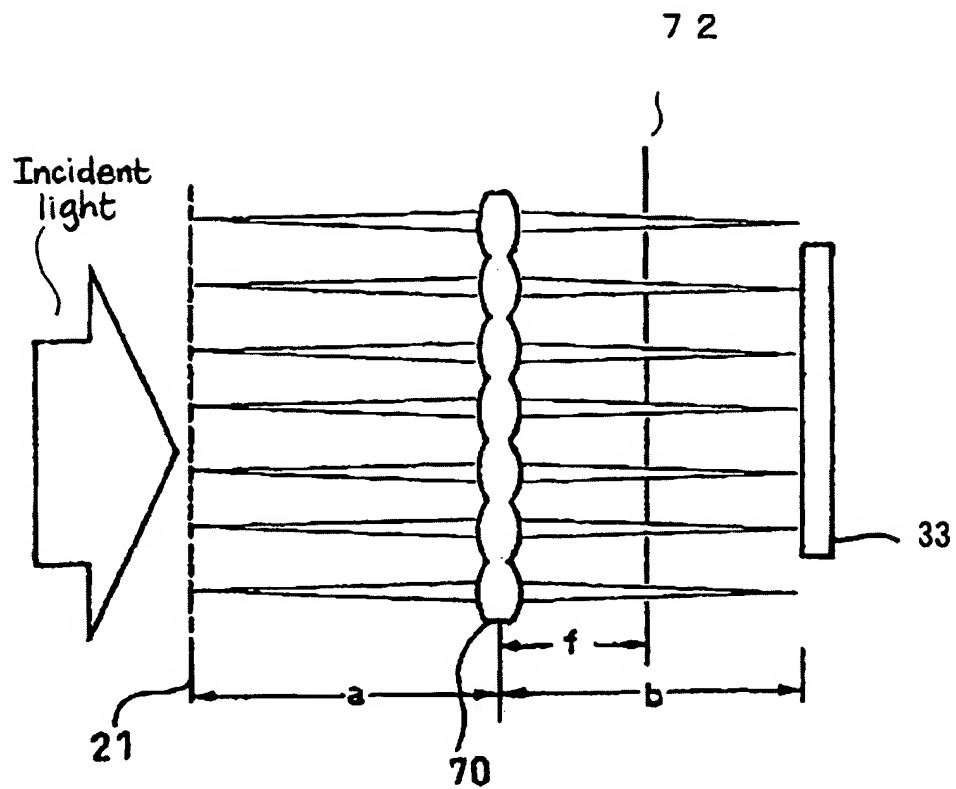


Fig. 7

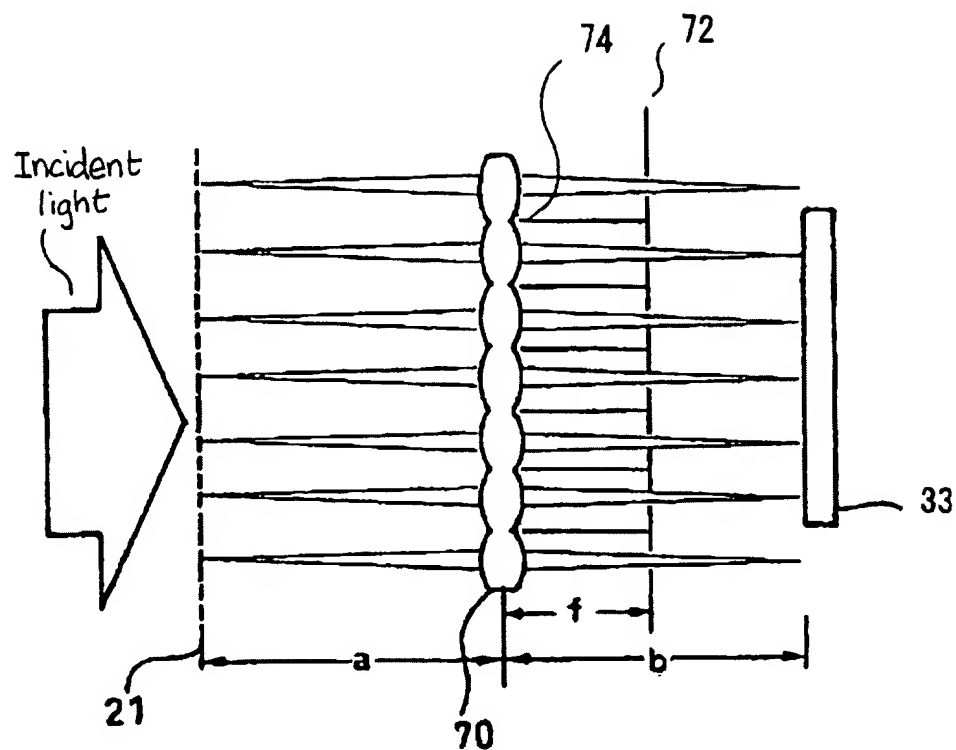
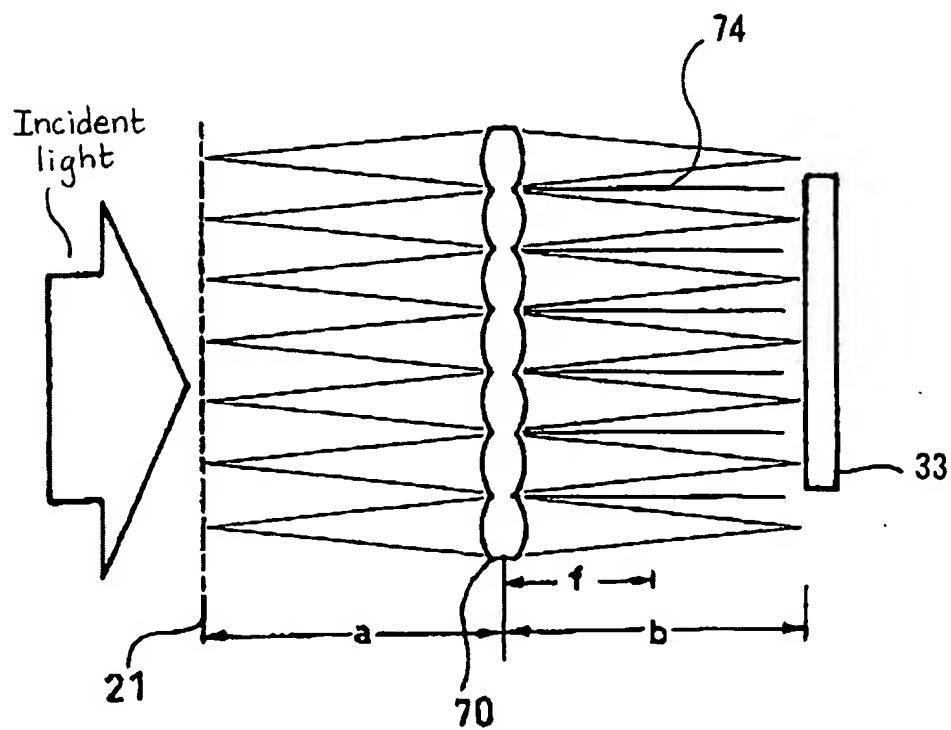


Fig. 8



Title: OPTICAL CONFIGURATION FOR IMAGING-TYPE
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Fig. 9

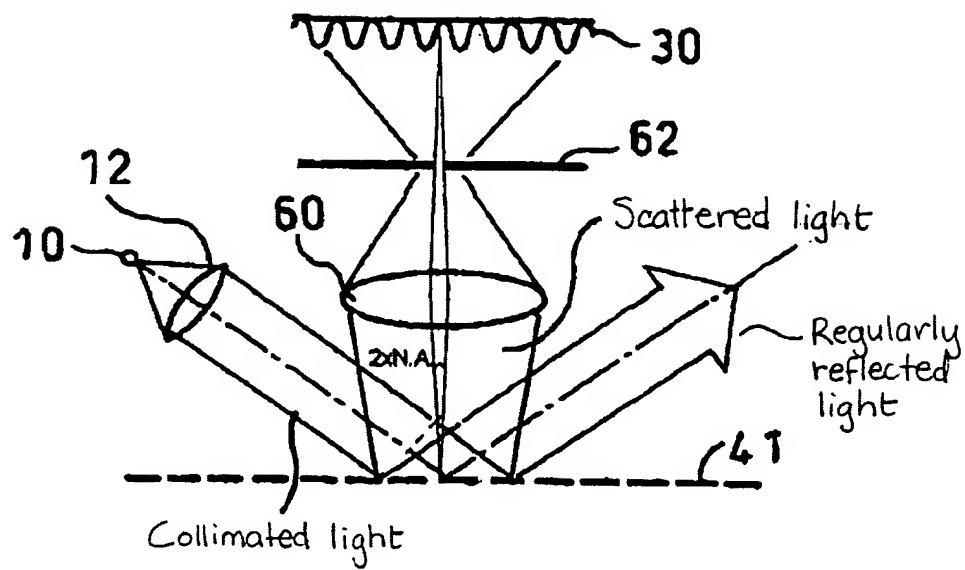
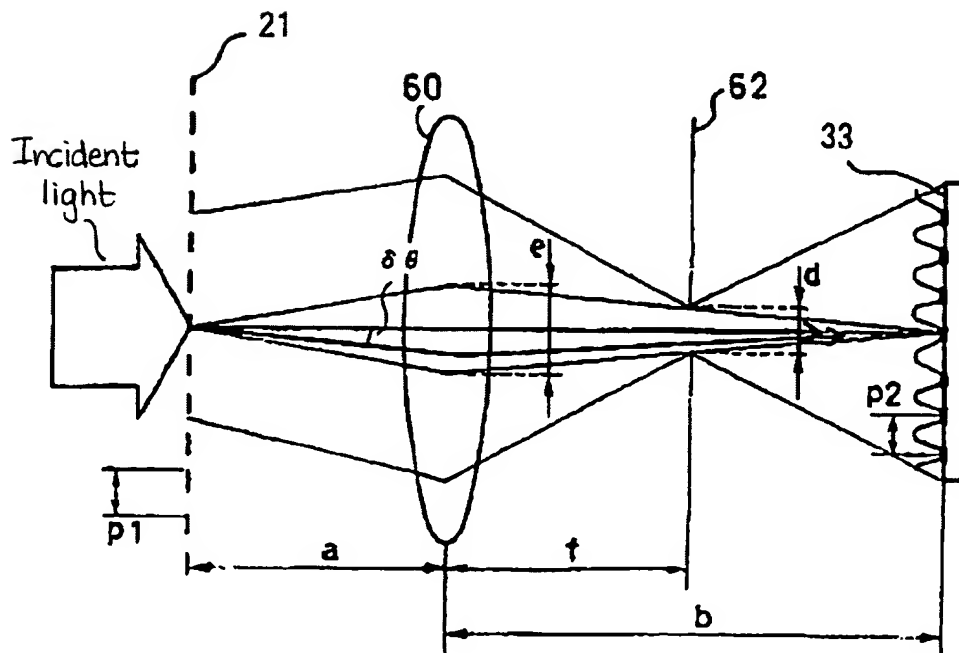


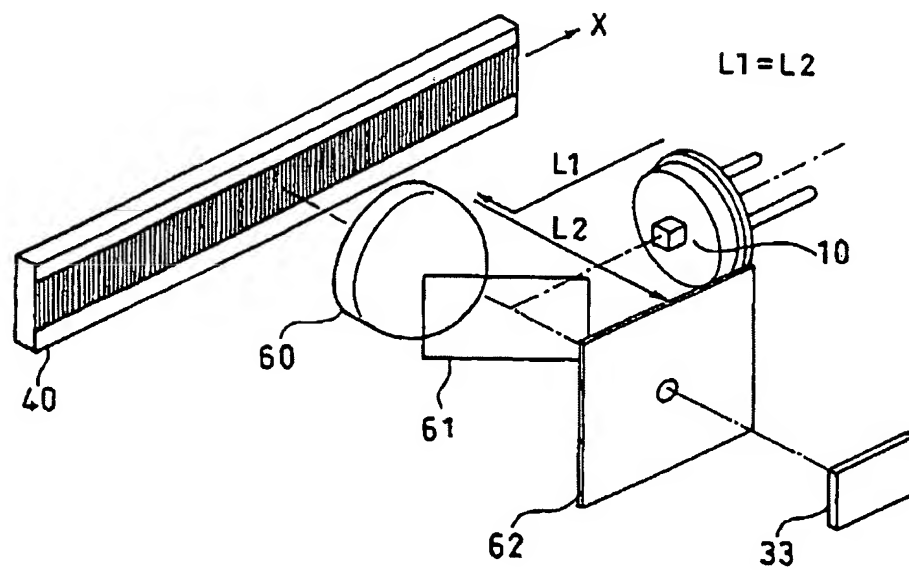
Fig. 10



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Inventors: Toshitaka Shimomura et al.
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Fig. 11



Title: OPTICAL CONFIGURATION FOR IMAGING-TYPE
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Inventors: Toshitaka Shimomura et al.
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Fig. 12

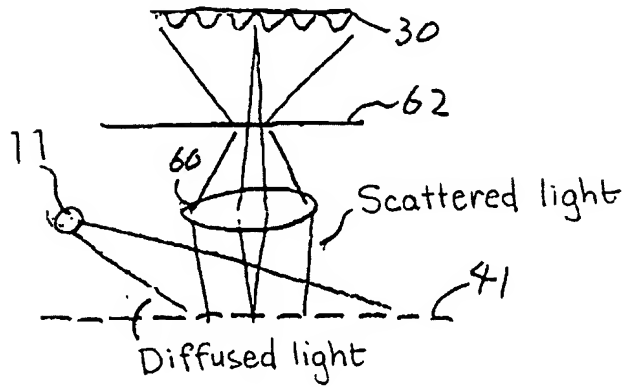


Fig. 13

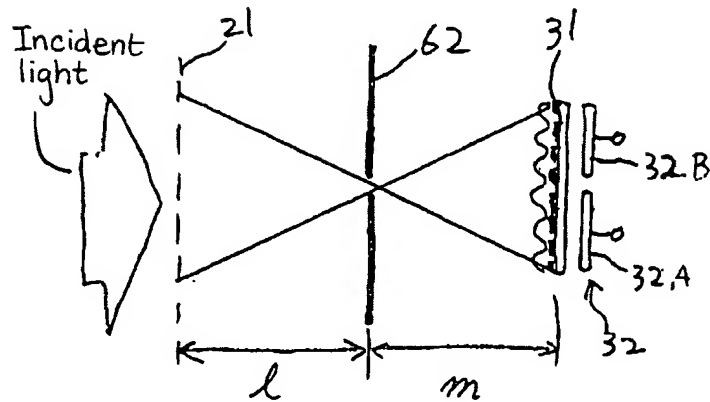


Fig. 14

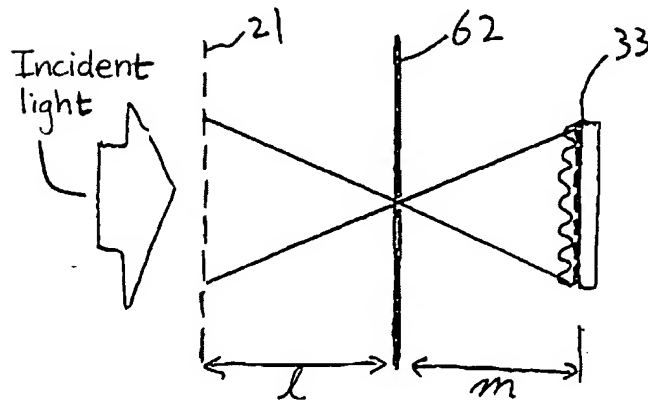
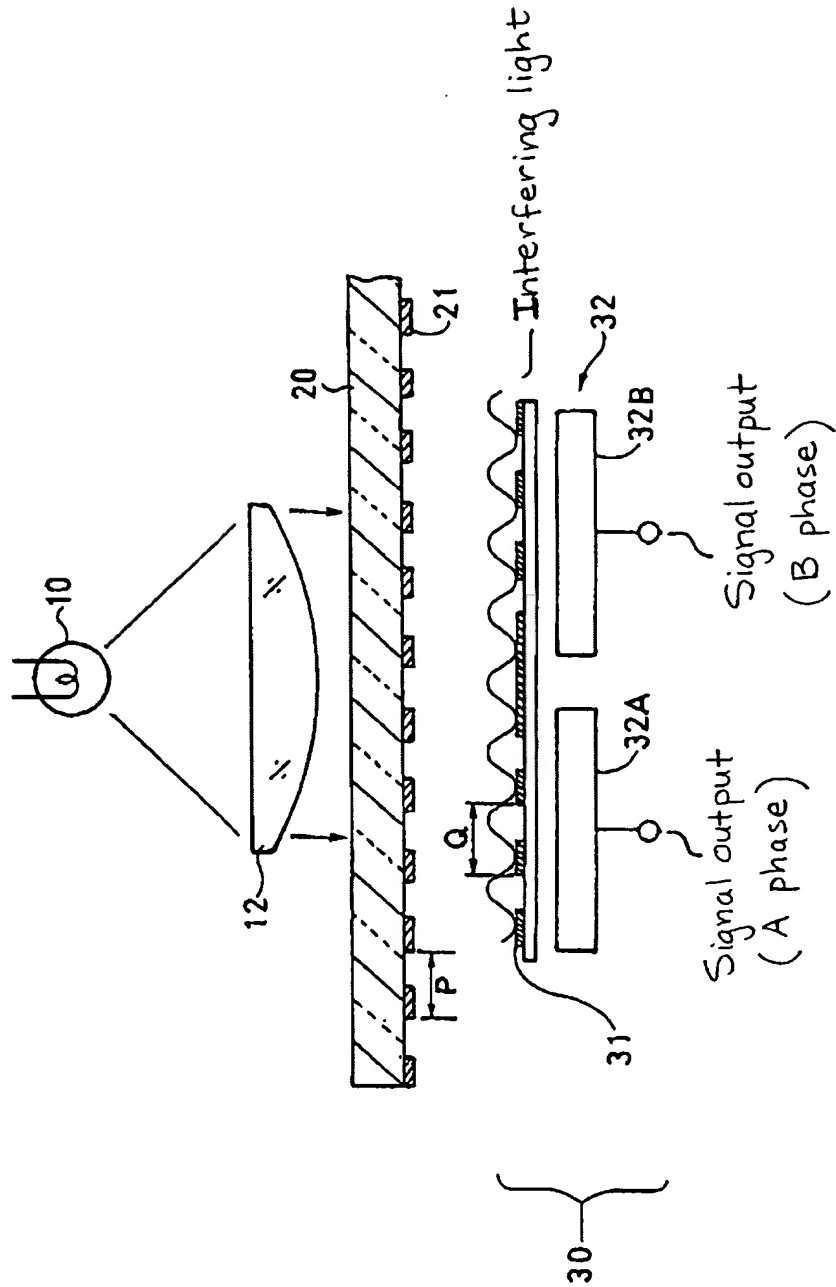


Fig. 15

Prior Art



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Fig. 16

Prior Art

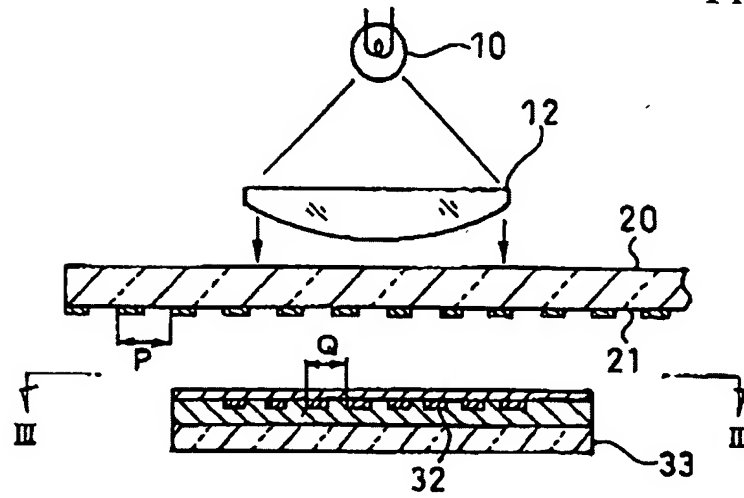


Fig. 17

Prior Art

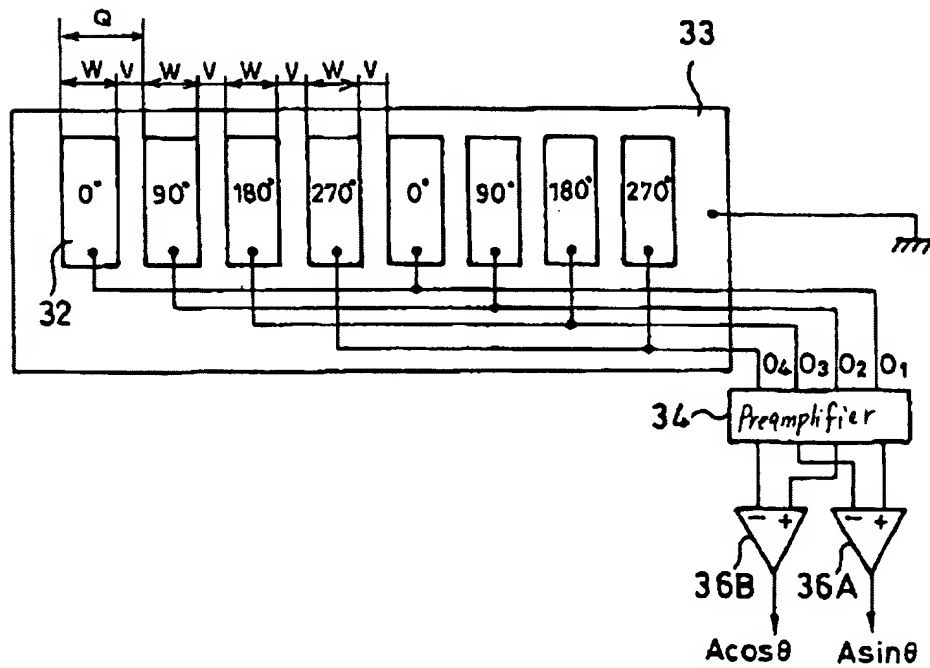


Fig. 18

Prior Art

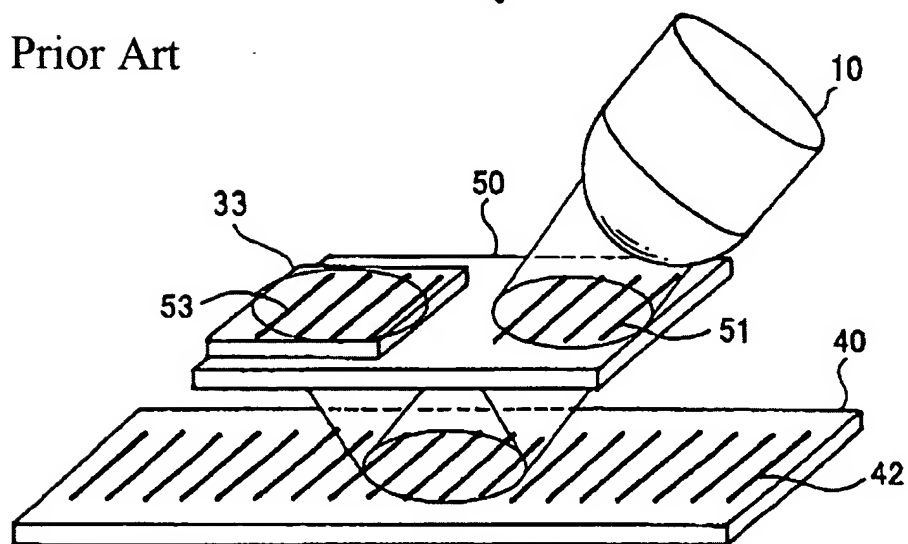
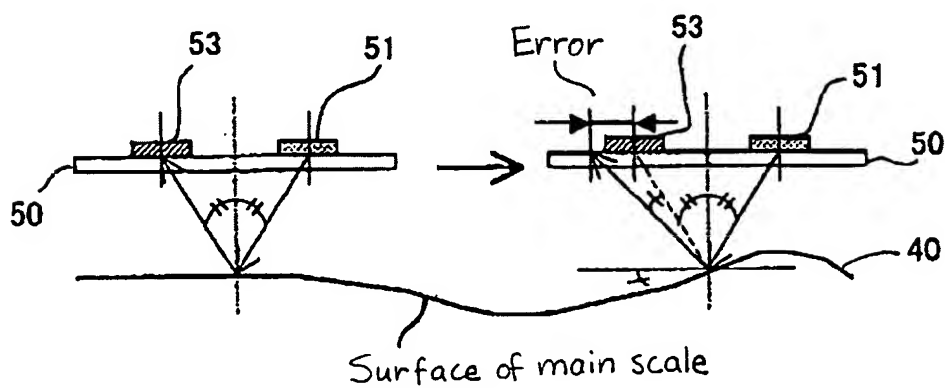


Fig. 19

Prior Art



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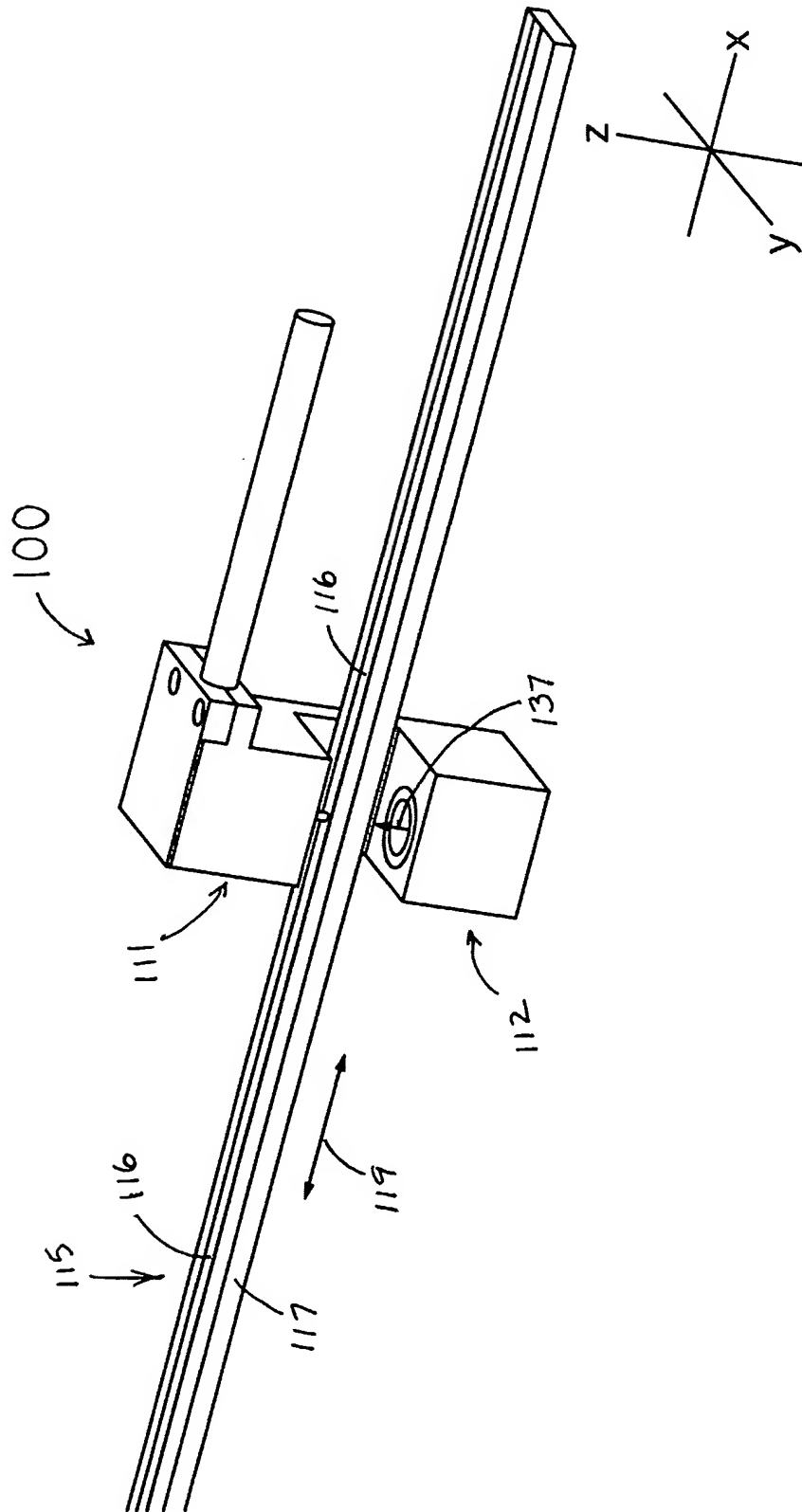


Figure 20

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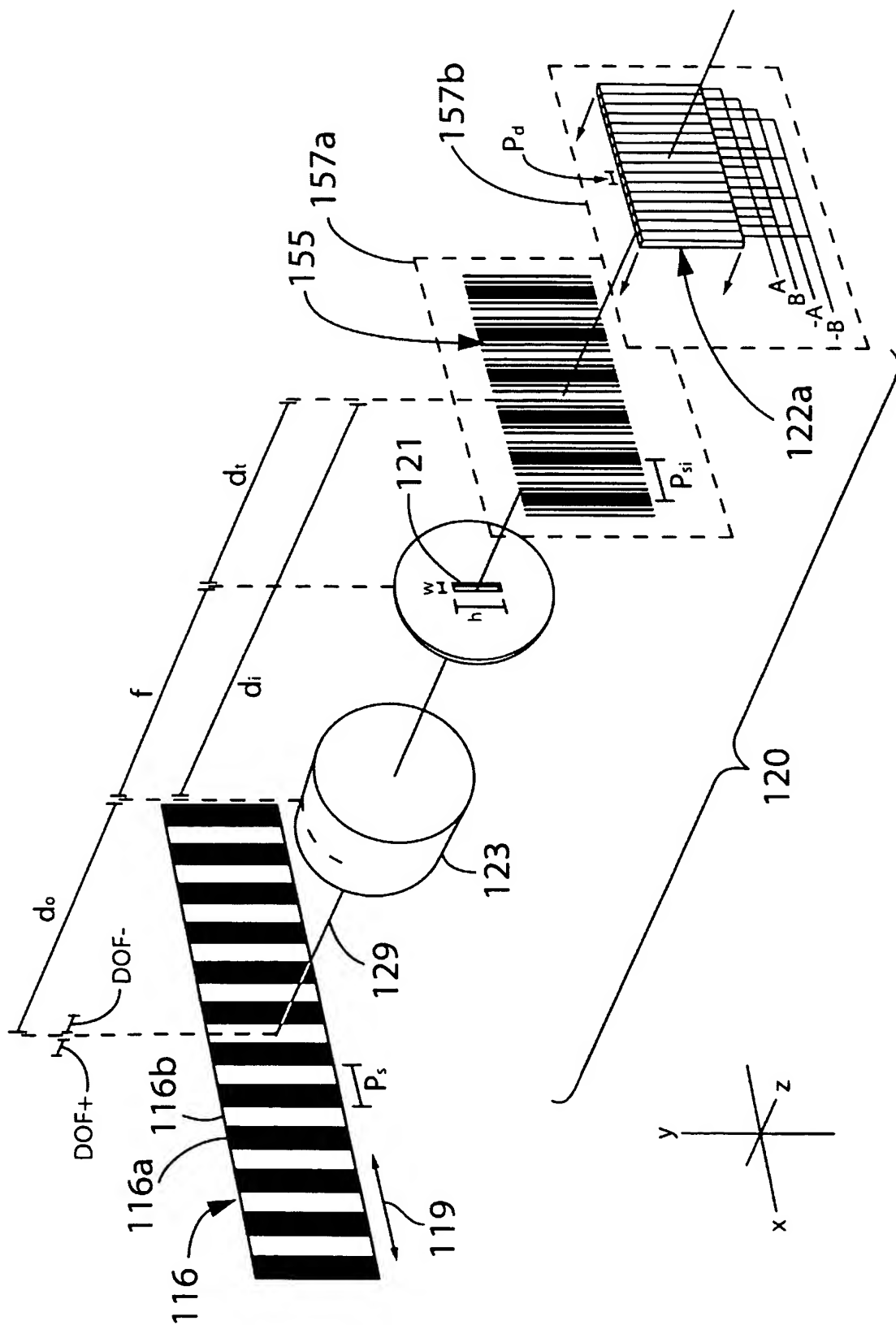


Figure 21

Inventors: Toshitaka Shimomura et al.
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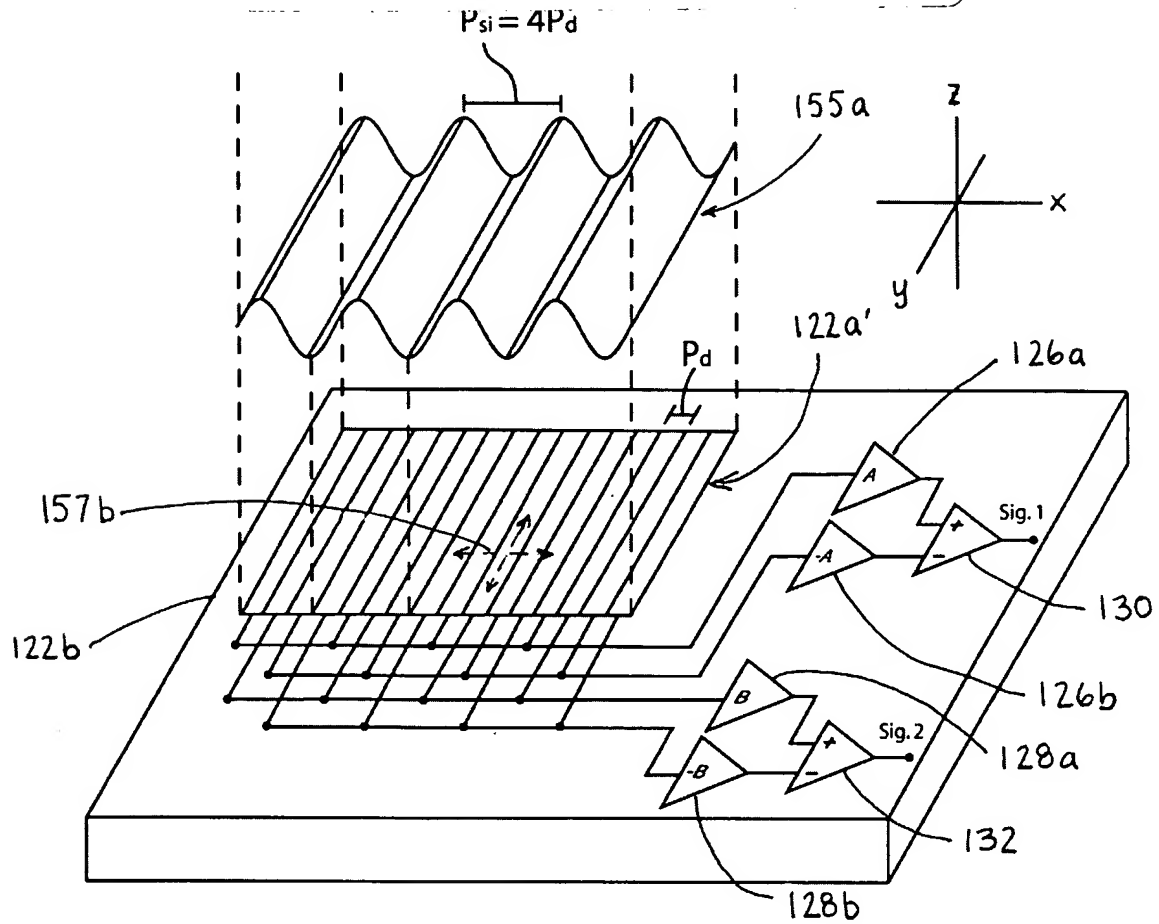


Figure 22

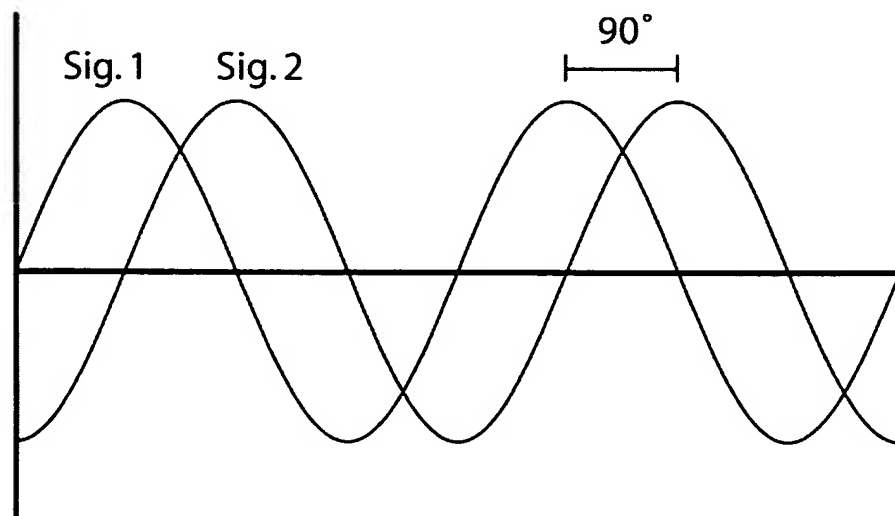
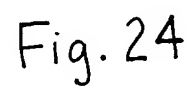


Figure 23



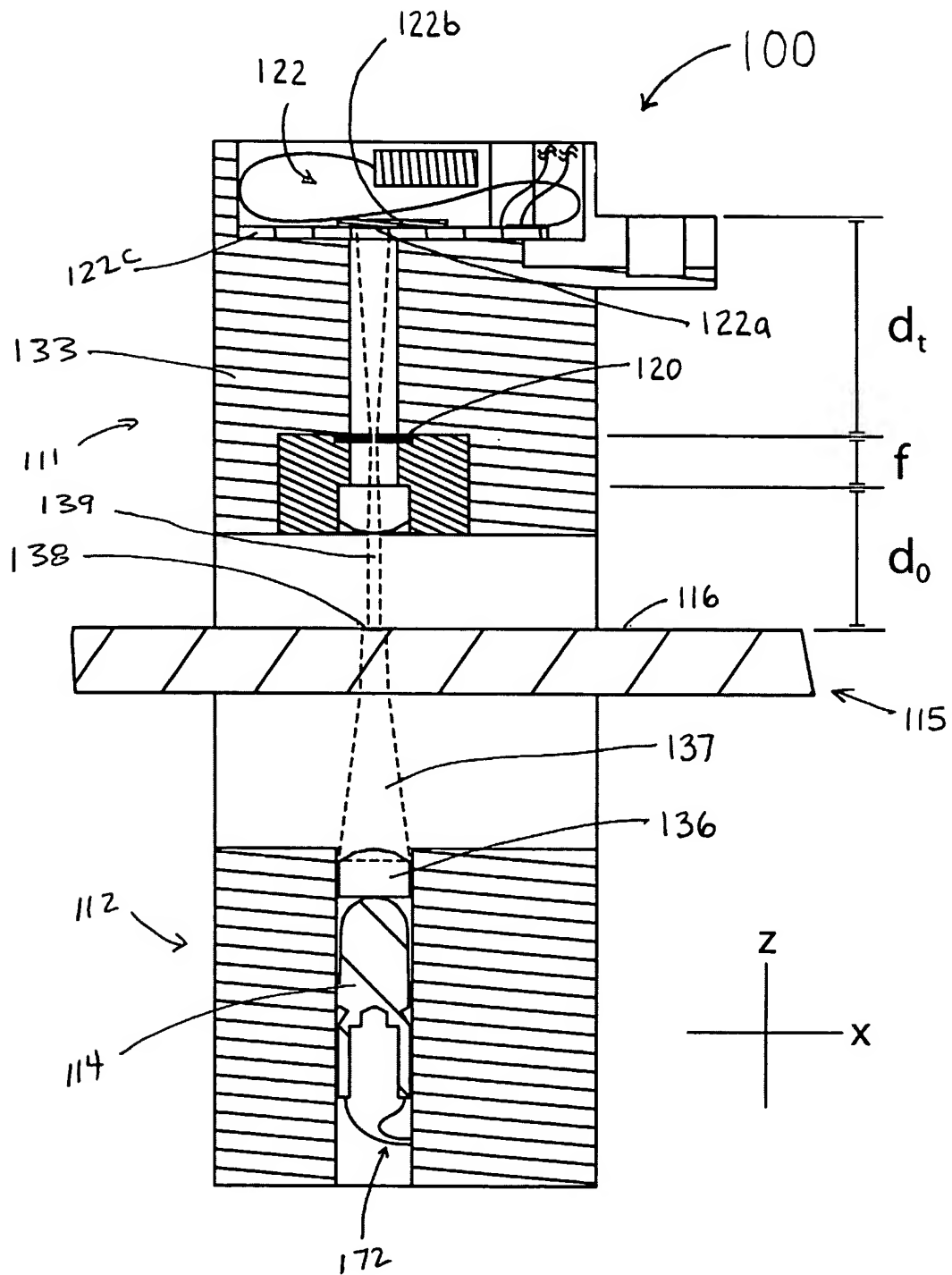


Fig. 25

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OPTICAL ENCODERS

Inventors: Toshitaka Shimomura et al.
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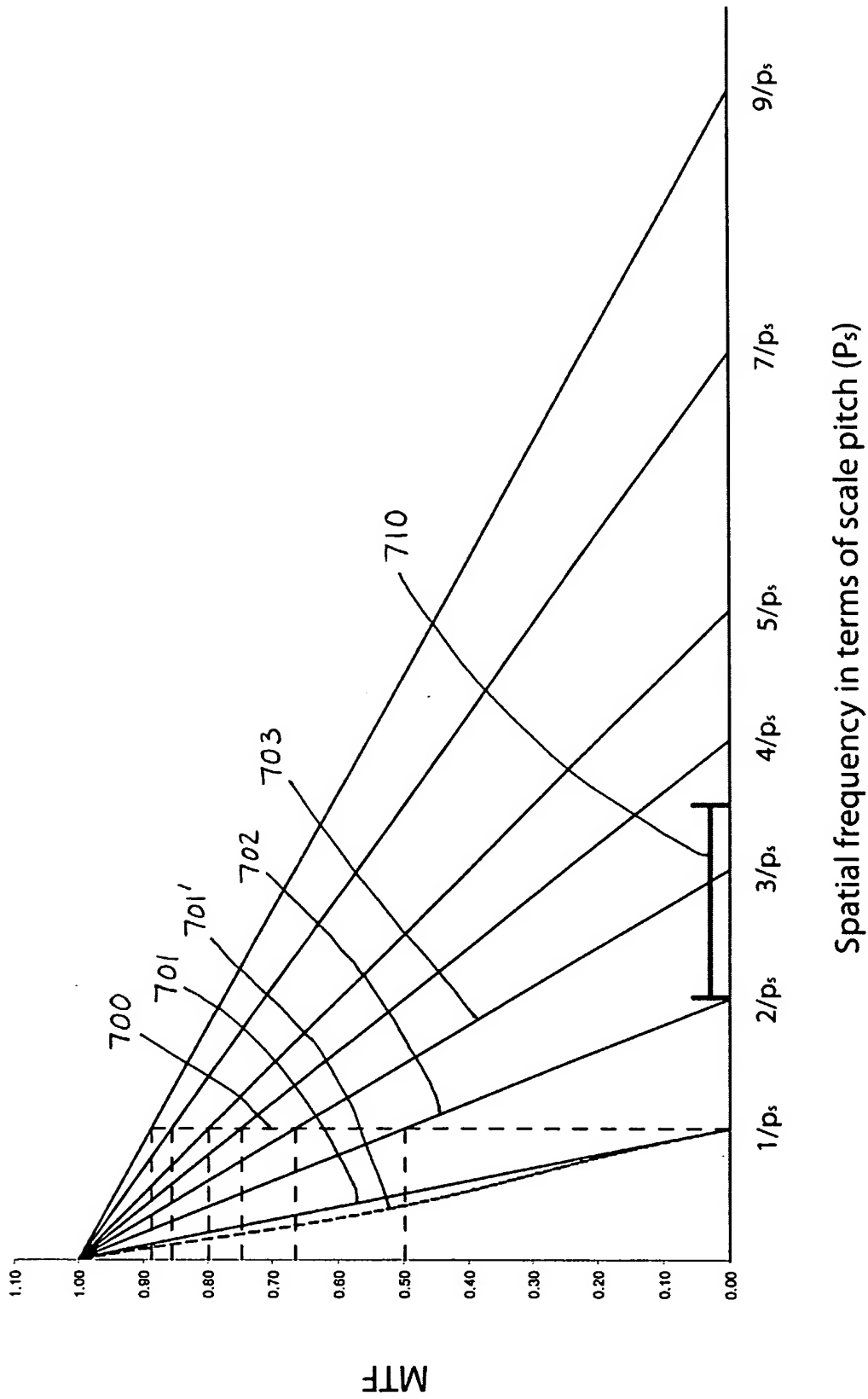


Figure 26

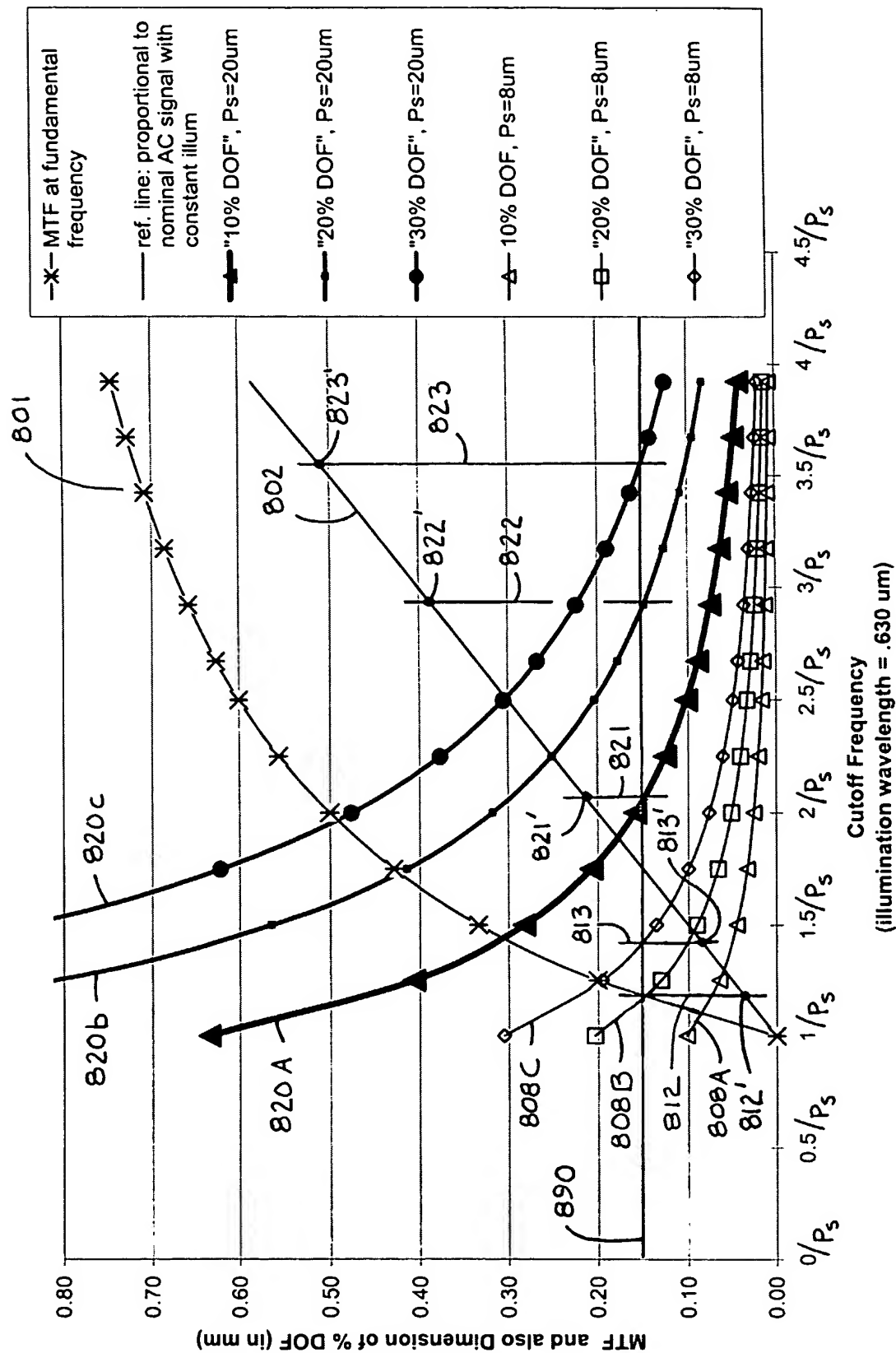


Figure 27

Title: OPTICAL CONFIGURATION FOR IMAGING-TYPE
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Inventors: Toshitaka Shimomura et al.

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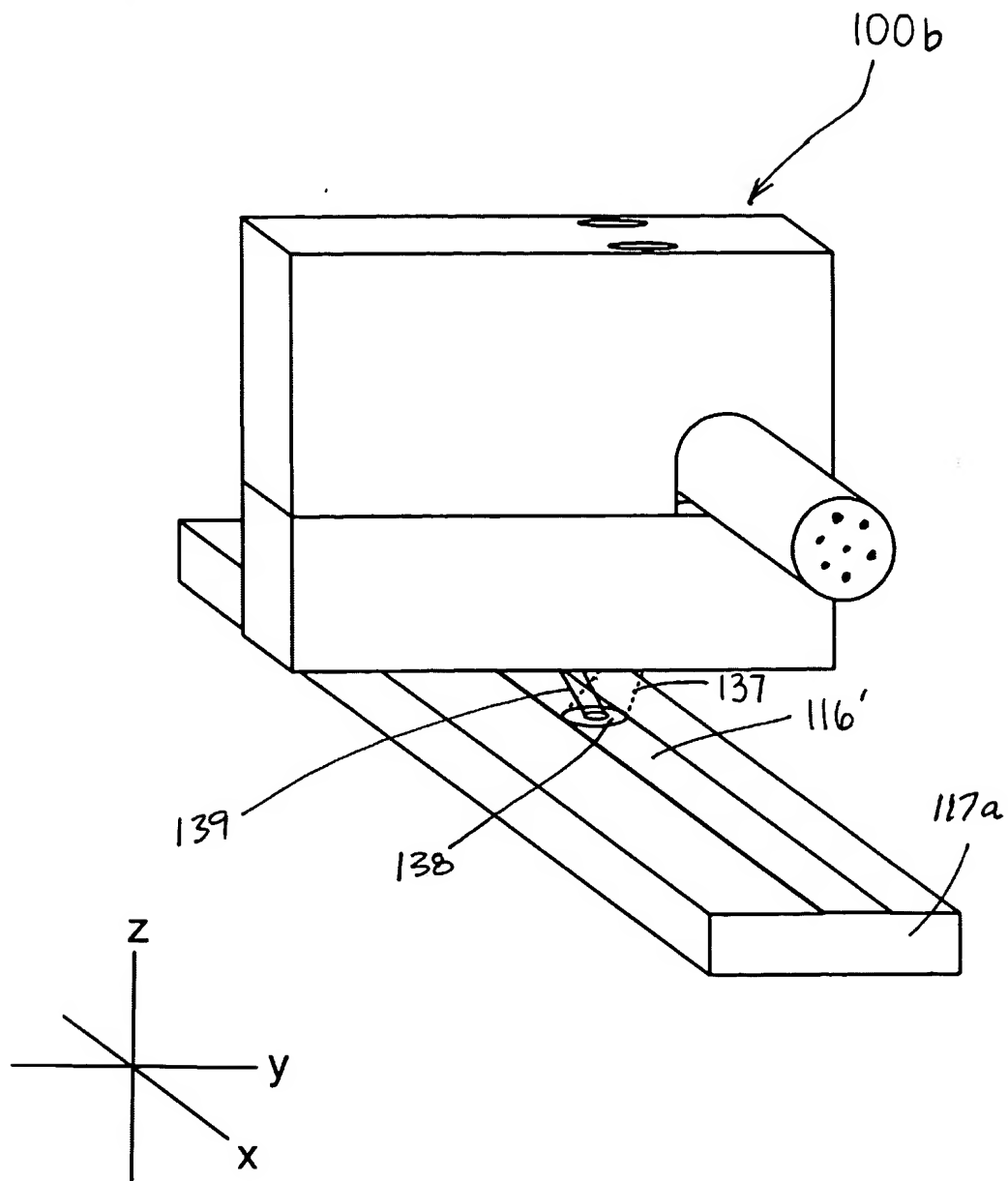


Fig. 28

Inventors: Toshitaka Shimomura et al.
Docket No.: MEIP122170

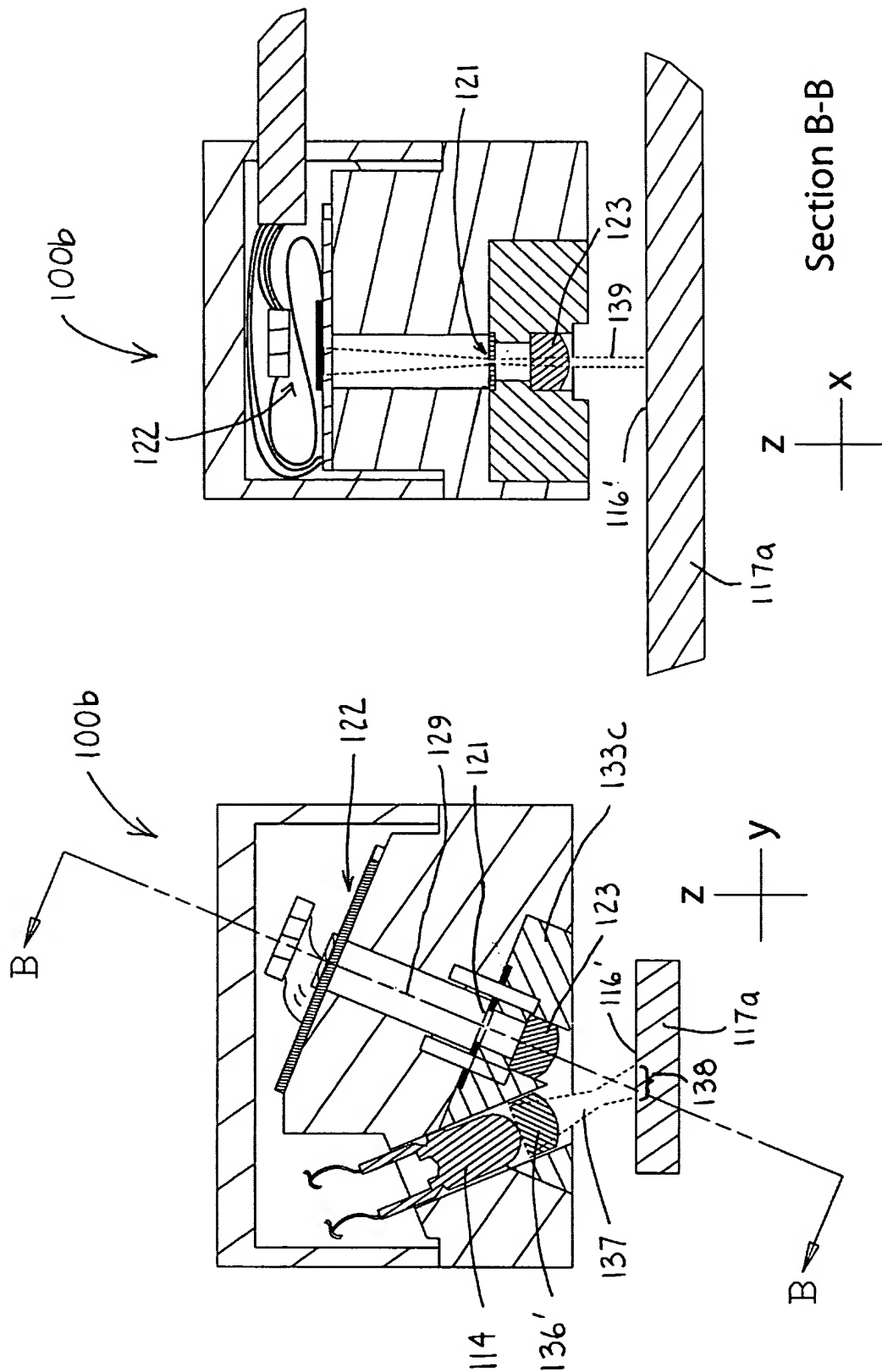


Figure 29B

Figure 29A

Title: OPTICAL CONFIGURATION FOR IMAGING-TYPE
OPTICAL ENCODERS

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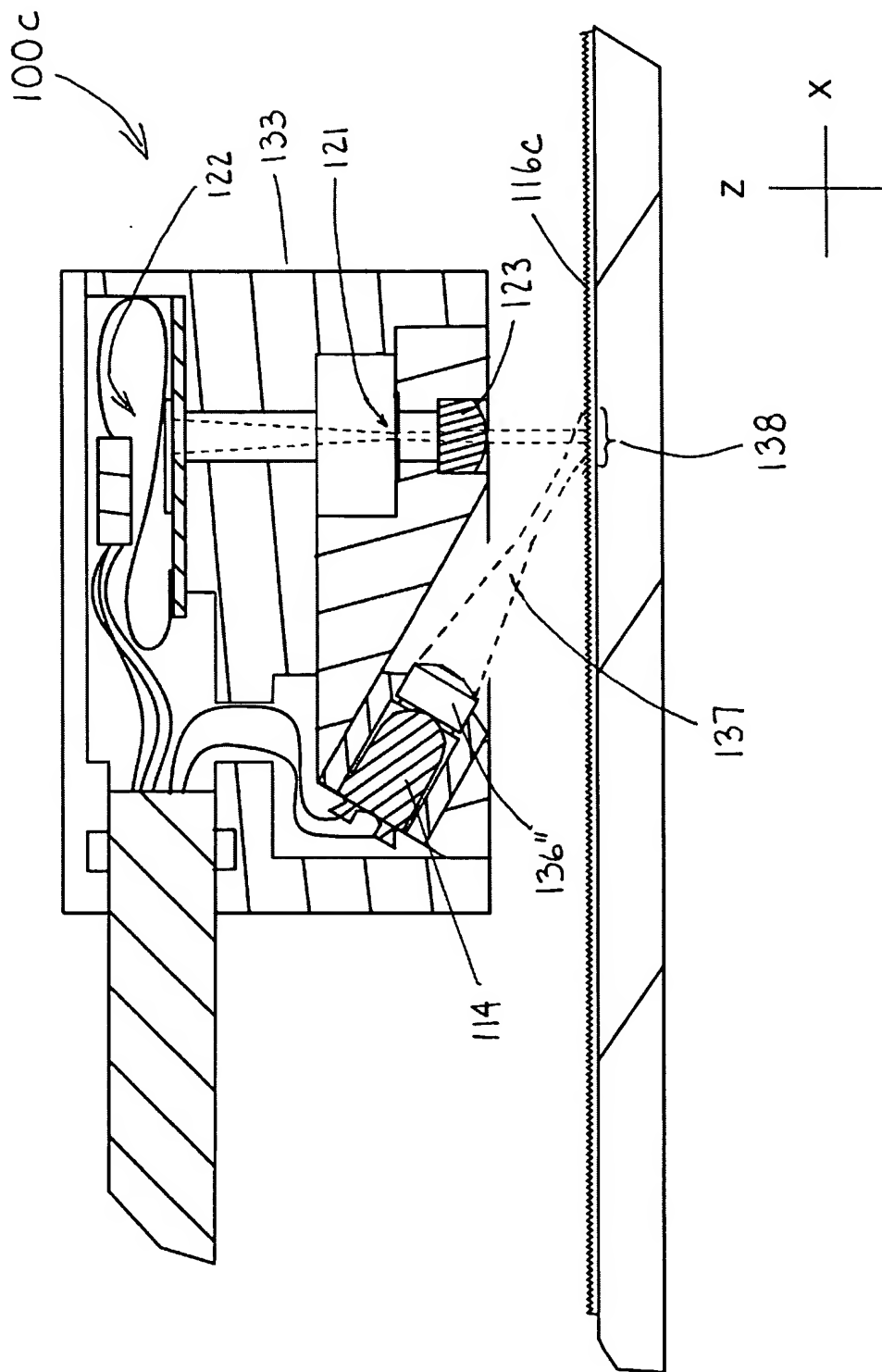
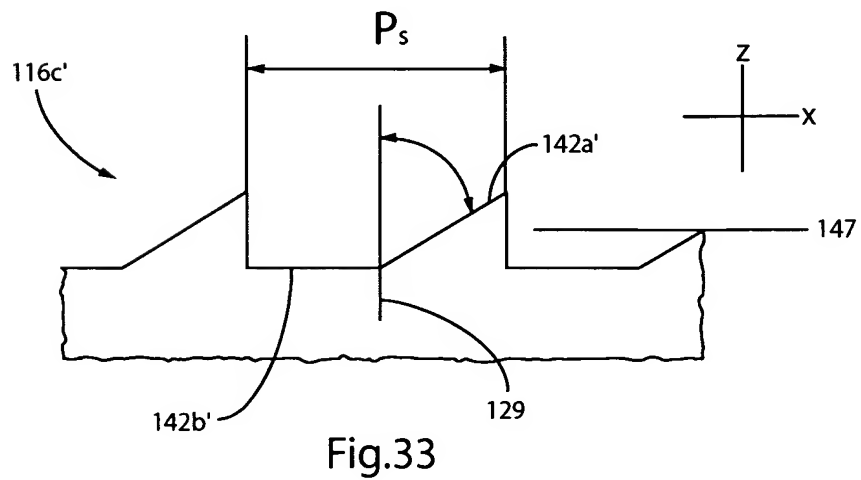
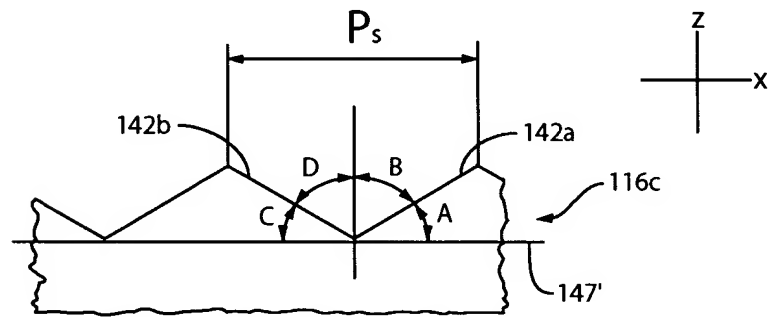
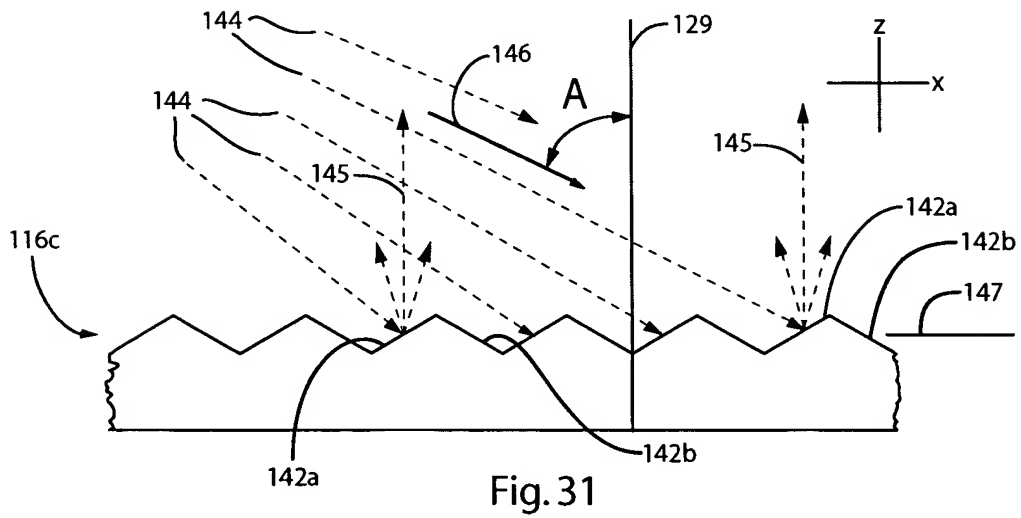


Figure 30

Title: OPTICAL CONFIGURATION FOR IMAGING-TYPE
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Title: OPTICAL CONFIGURATION FOR IMAGING-TYPE
OPTICAL ENCODERS

Inventors: Toshitaka Shimomura et al.

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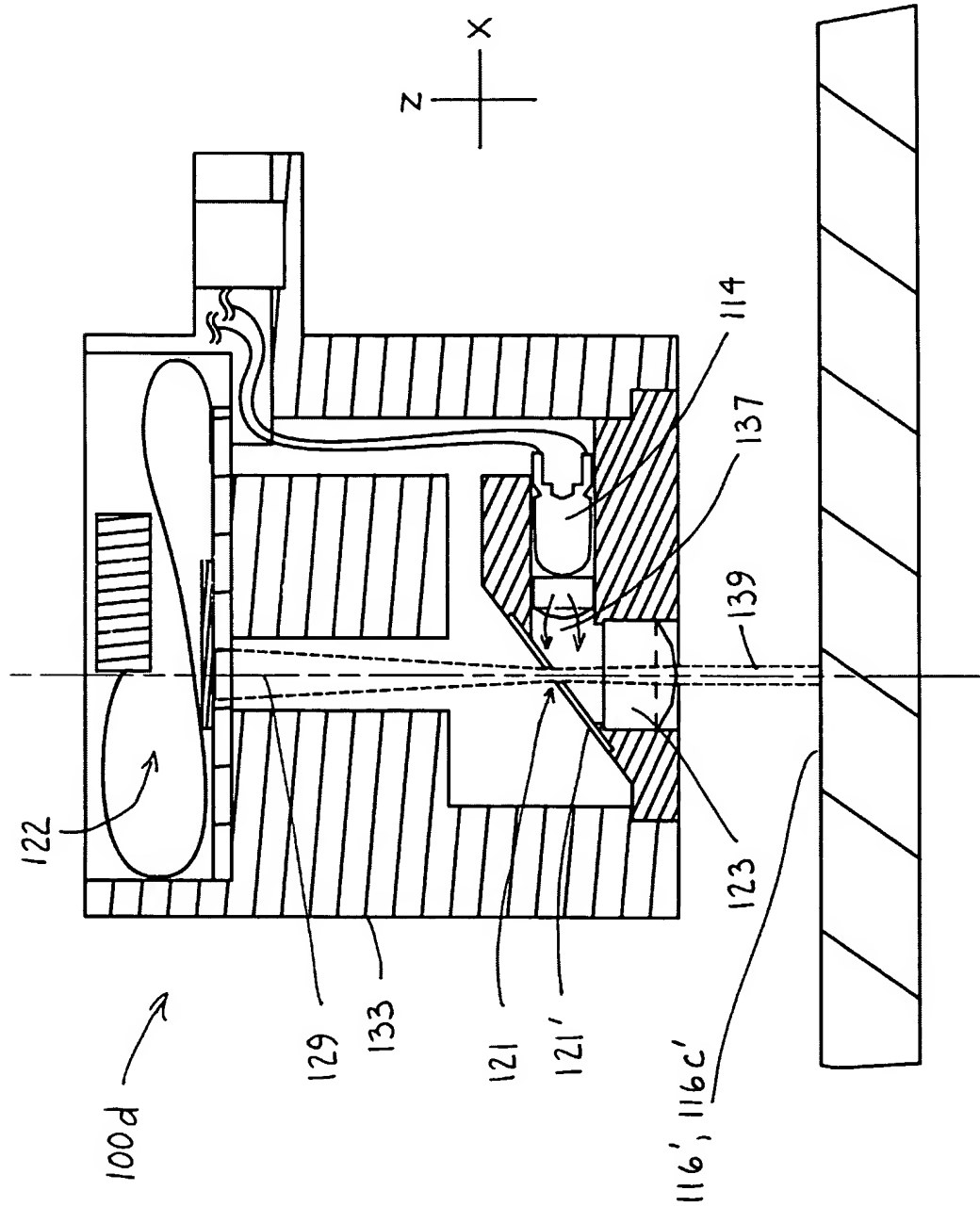


Figure 34

Inventors: Toshitaka Shimomura et al.
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Toshitaka Shimomura et al.

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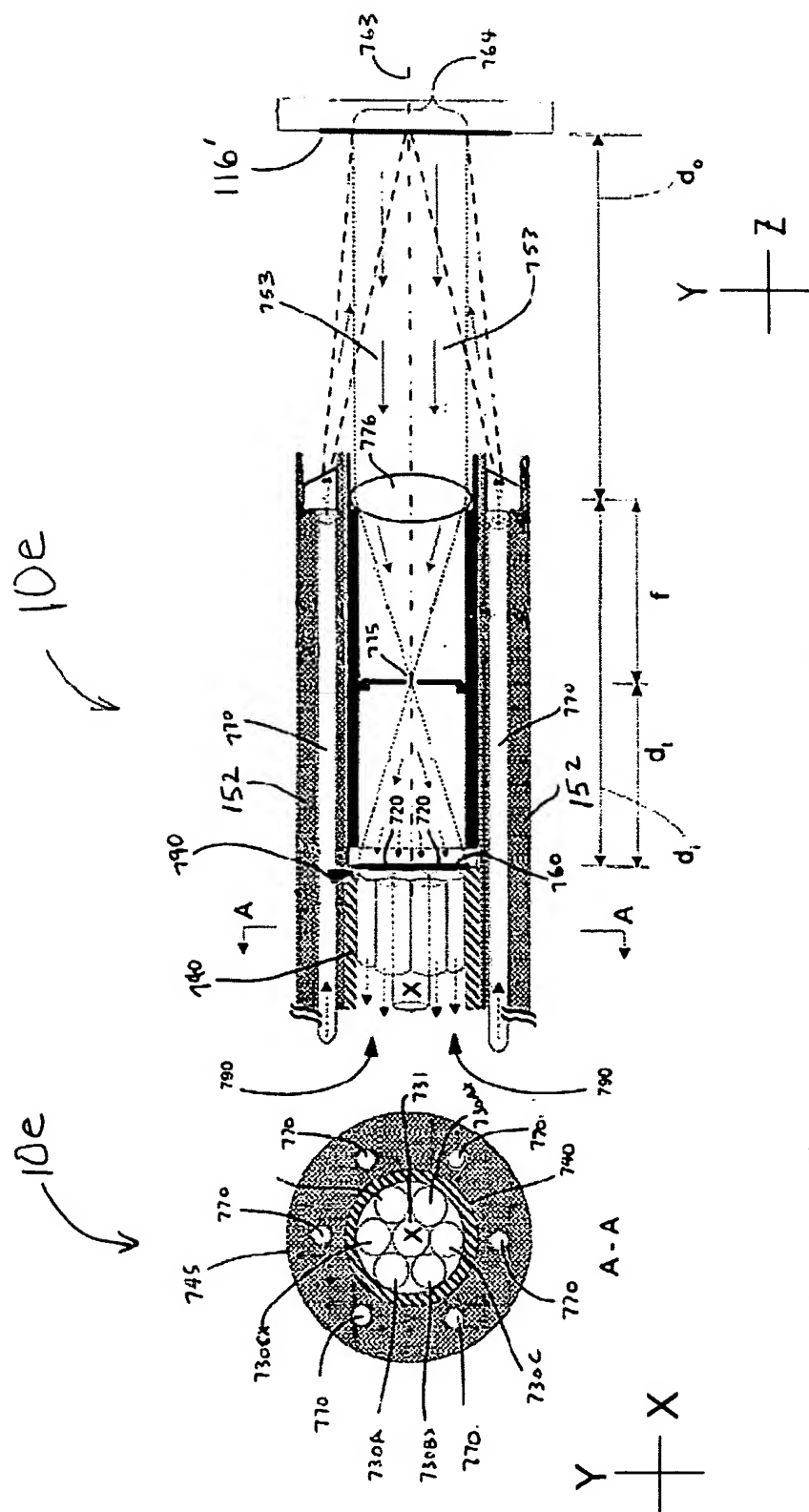
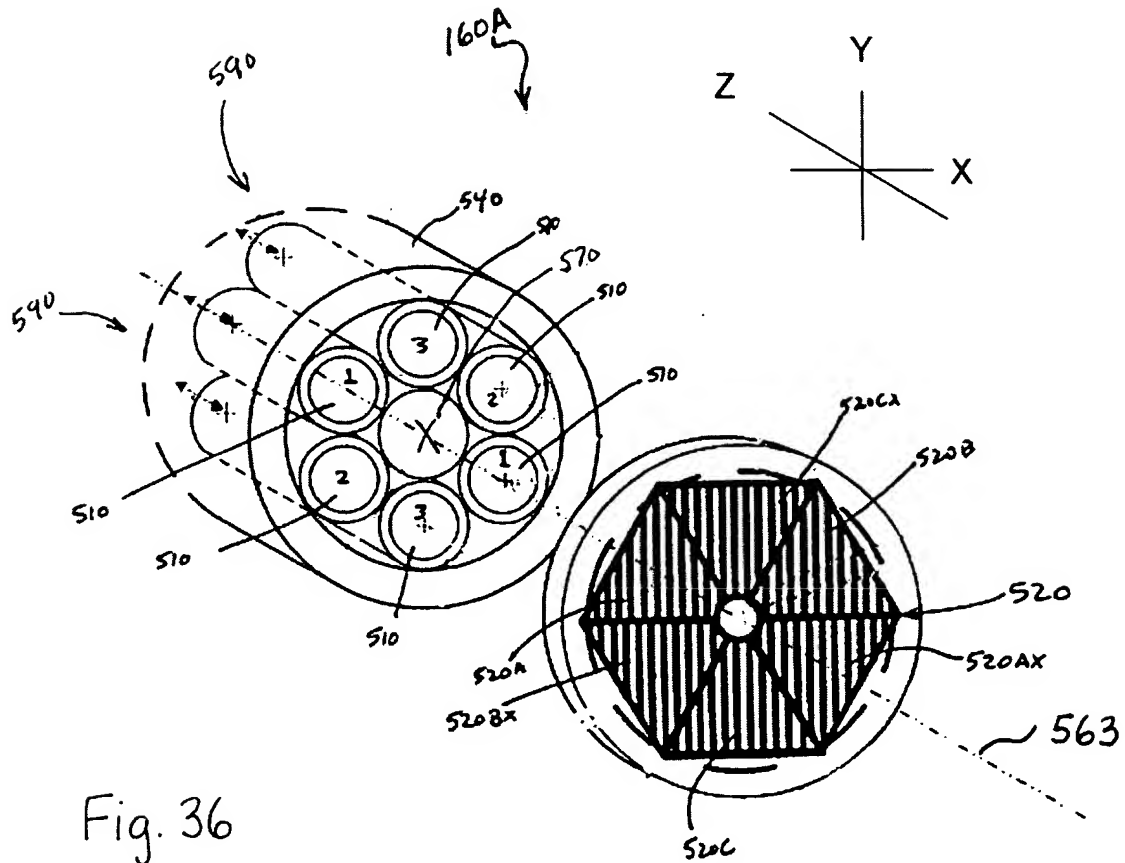


Fig. 35A

Fig. 35B

Title: OPTICAL CONFIGURATION FOR IMAGING-TYPE
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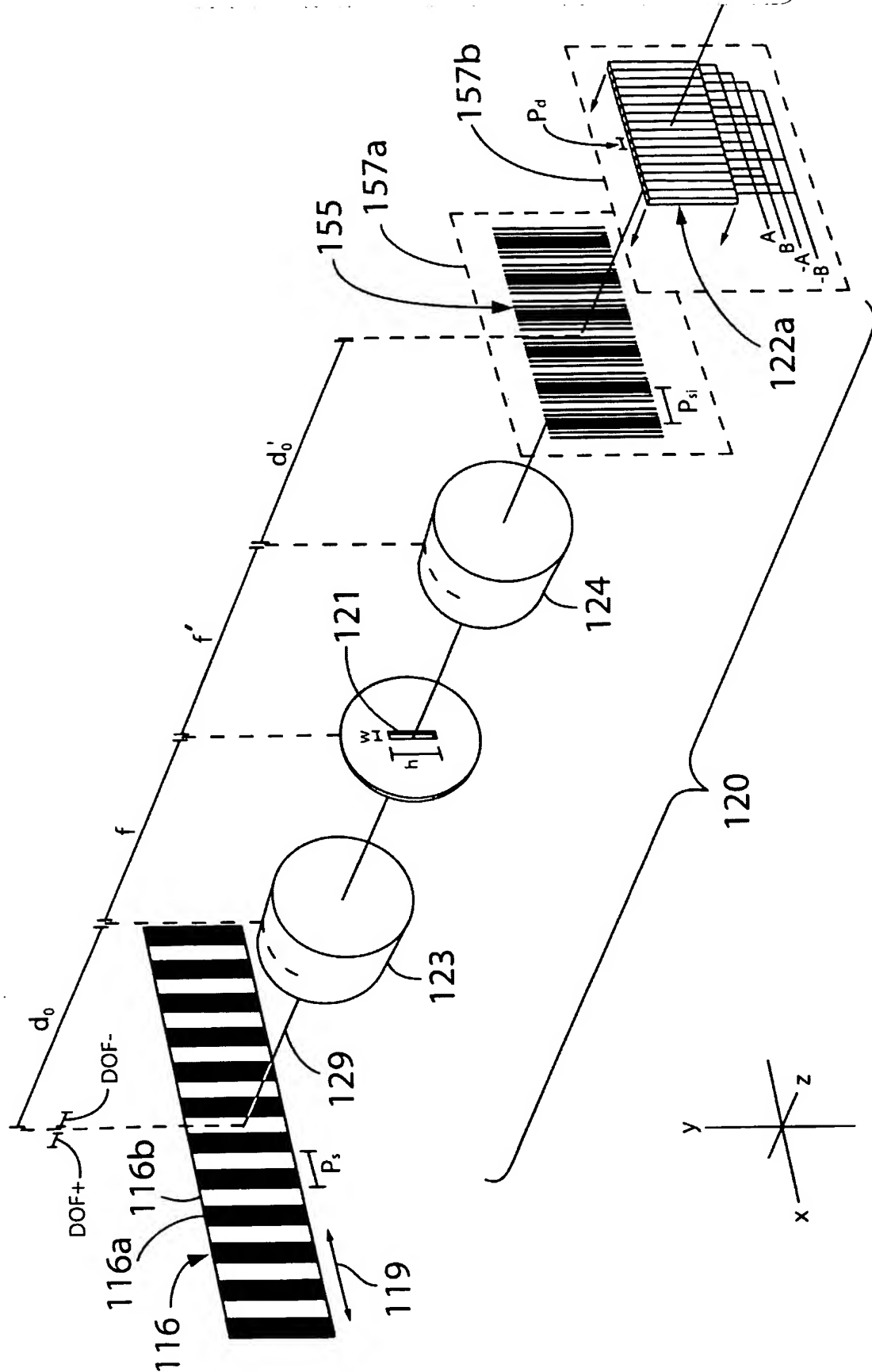


Figure 37